#14
2-5-02

PATENT APPLICATION

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of

Applicant: Vanotti et al.

Title: Removal of Phosphorus from Waste Water

Group Art Unit:

Examiner:

Serial No.:

Docket No.: 0054.98

Filed:

DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. 1.56

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In compliance with 37 C.F.R. 1.56 Applicants herewith submit documents believed to be relevant to the above-identified patent application. The documents are listed on form PTO-1449 attached hereto. A copy of each document is enclosed.

This Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; or (iii) the above information constitutes prior art in the subject invention.

REFERENCES

1. U.S. Patent No. 6,153,094, Jowett et al., Nov. 28, 2000.
2. U.S. Patent No. 6,039,874, Teran et al., Mar. 21, 2000.
3. U.S. Patent No. 6,183,643, Goodley, Feb. 6, 2001.
4. U.S. Patent No. 6,163,932, Rosen, Dec. 26, 2000.
5. U.S. Patent No. 6,245,121, Lamy et al., June 12, 2001.
6. U.S. Patent No. 6,207,059, Moore, III., Mar. 27, 2000.
7. U.S. Patent No. 5,228,997, Martin et al., Jul. 20, 1993.
8. U.S. Patent No. 6,136,185, Sheaffer, Oct. 24, 2000.
9. U.S. Patent No. 6,113,788, Molof et al., Sept. 5, 2000.
10. U.S. Patent No. 6,117,323, Haggerty, Sept. 12, 2000.
11. U.S. Patent No. 6,139,743, Park et al., Oct. 31, 2000.
12. U.S. Patent No. 6,177,007, Lee et al., Jan. 23, 2001.
13. U.S. Patent No. 6,200,469, Wallace, Mar. 13, 2001.
14. Hunt, P.G., et al., "State of the Art for Animal Wastewater Treatment in Constructed Wetlands", pp. 53-65.
15. Szoji, A.A., et al., "Treatment of Swine Wastewater by Constructed Wetlands", Clean Water-Clean Environment-21st Century Conference Proceedings, Vol. II: Nutrients, pp. 227-230, Kansas City, Missouri, March 5-8, 1995.
16. Hunt, P.G., et al., "Swine Wastewater Treatment in Constructed Wetlands", Environmentally Sound Agriculture, Proceedings of the Second Conference, 20-22 April 1994, Orlando, FL.Am. Soc. Agric. Rng., St. Joseph, MI, pp. 268-275.
17. Hunt, P.G., et al., "Constructed Wetland Treatment of Swine Wastewater", Written for Presentation at the 1993 International Winter Meeting Sponsored by ASAE, pp. 1-12, Chicago, IL, December 12-17, 1993.

18. Humenik, F.J., et al., "Constructed Wetlands for Swine Wastewater Treatment", Seventh International Symposium on Agricultural and Food Processing Wastes (ISAFPW95), pp. 87-97, Chicago, Illinois, June 18-20, 1995.

19. Vanotti, M.B., et al., "Solids and Nutrient Removal from Flushed Swine Manure Using Polyacrylamides", Transactions of the ASAE, Vol. 42, (6), pp. 1833-1840, 1999.

20. Cook, M.G., et al., "Reducing Diffuse Pollution through Implementation of Agricultural Best Management Practices: A Case Study", Wat. Sci. Tech., Vol. 33, (4-5), pp. 191-196, 1996.

21. Vanotti, M.B., et al., "Nitrifying High-strength Wastewater", Industrial Wastewater, pp. 30-36, September/October 2000.

22. Vanotti, M.B., et al., "Nitrification Treatment of Swine Wastewater with Acclimated Nitrifying Sludge Immobilized in Polymer Pellets", Transactions of the ASAE, Vol. 43, (2), pp. 405-413, 2000.

23. Vanotti, M.B., et al., "Nitrification of Swine Wastewater Using Bacteria Encapsulated in Polymer Pellets", Proceedings of the 1999 Animal Waste Management Symposium, Cary, NC, January 27-28, 1999.

24. Vanotti, M.B. et al., "Advanced Treatment System for Liquid Swine Manure Using Solid-Liquid Separation and Nutrient Removal Unit Processes", Animal, Agricultural and Food Processing Wastes, Proceedings of the Eighth International Symposium, pp. 393-400, Des Moines, Iowa, October 9-11, 2000.

25. Manthey, T.A., et al., "Denitrification in a Restored Riparian Zone Adjacent to a Swine Wastewater Spray Field", Soil Science Divisions, Page 296, Division S-6.

26. Hunt, P.G., et al., "Denitrification in Constructed Wetlands for Swine Wastewater Treatment", Soil Science Divisions, Page 329, Division S-10.

27. Szogi, A.A., et al., "Distribution of Dissolved Nutrients in the Soil and Water Column of a Constructed Wetland for Swine Wastewater Treatment", Soil Science Divisions, Page 330, Division S-10.

28. Edwards, D.R., et al., "Environmental Impacts of On-Farm Poultry Waste Disposal-A Review", Bioresource Technology, Vol. 41, pp. 9-33, 1992.

29. Westerman, P.W., et al., "Tangential Flow Separation and Chemical Enhancement to Recover Swine Manure Solids and Phosphorus", ASAE Meeting Presentation, pp. 1-25, Orlando, Florida, July 12-16, 1998.

30. Heathwaite, L., et al., "A Conceptual Approach for Integrating Phosphorus and Nitrogen Management at Watershed Scales", J. Environ. Qual., Vol. 29, pp. 158-166, 2000.

31. Sharpley, A., et al., "Practical and Innovative Measures for the Control of Agricultural Phosphorus Losses to Water: An Overview", J. Environ. Qual., Vol. 29, (1), pp. 1-9, 2000.

32. Scott, P.H., et al., "Experimental Studies for Improved Nitrification in Shallow Lagoon Systems", Wat. Sci. Tech., Vol. 29, (4), pp. 305-308, 1994.

33. Loehr, R.C., et al., "Development and Demonstration of Nutrient Removal from Animal Wastes", EPA Report Collection, Report No. EPA-R2-73-095, pp. 1-60, January 1973.

34. Warrick, J., et al., "New Studies Show that Lagoons are Leaving Groundwater, Rivers Affected by waste", The News and Observer, Sunday, February 19-26, 1995.

35. Cochran, K., et al., "An Economic Analysis of Alternative Hog Waste Management Technologies", Dollars and Sense, pp. 1-75, Environmental Defense, Washington, D.C., 2000.

36. Federal Register, Environmental Protection Agency, Part 2, Proposed Rules, Vol. 66, (9), pp. 2960-3145, January 12, 2001.

Respectfully submitted,

July 13, 2001
Date

Gail E. Poulos, Patent Advisor
Registration No. 36,327
USDA-ARS-OTT
5601 Sunnyside Ave. Rm.4-1159
Beltsville, MD 20705-5131
Telephone: (301) 504-5302

Enclosures
PTO-1449 (3 sheets)
36 References

cc:
H. Silverstein
M. Vanotti